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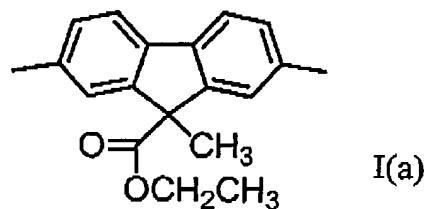
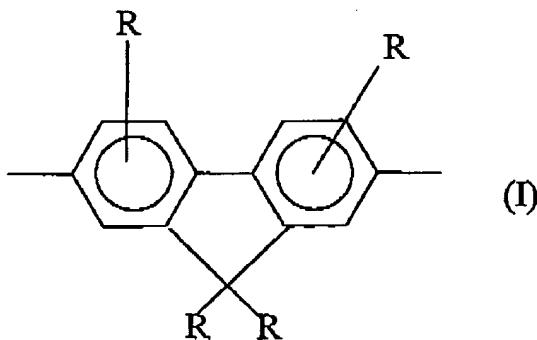
NO. 5123 P. 2

Application No.: 10/809,737
Docket No.: PE0667 US DIV

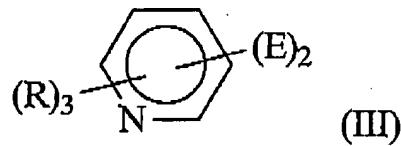
JAN 16 2007

Listing of Claims

1. (Currently Amended) A copolymer comprising at least one first monomeric unit and at least one second monomeric unit, wherein the at least one first monomeric unit has a formula selected from the group consisting of Formulae I and I(a)



and the at least one second monomeric unit is selected from 6-membered-ring heteroaromatic groups having Formula III

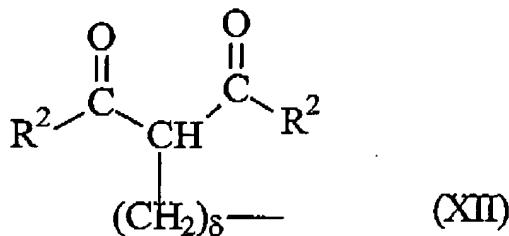


where:

Application No.: 10/809,737
 Docket No.: PE0667 US DIV

in each of Formulae I and III:

R is a substituent on a carbon atom which can be the same or different at each occurrence and is selected from hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, F, -CN, -OR¹, -CO₂R¹, -C_ψF_λ, -OC_ψH_θF_λ, -SR¹, -N(R¹)₂, -P(R¹)₂, -SOR¹, -SO₂R¹, -NO₂, and beta-dicarbonyls having Formula XII



or adjacent R groups together can form a 5- or 6-membered cycloalkyl, aryl, or heteroaryl ring,

such that:

R¹ is a substituent on a heteroatom which can be the same or different at each occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl; and ψ is an integer between 1 and 20, and θ and λ are integers satisfying Equation A1 below:

$$\theta + \lambda = 2\psi + 1; \quad (\text{Equation A1});$$

in Formula III:

E can be the same or different at each occurrence and is a single bond or a linking group selected from arylene and heteroarylene;

in Formula XII:

R² is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;

δ is 0 or an integer from 1 to 12; with the proviso that:

when R in formula III is hydrogen, alkyl, F, -CN, -OR¹, or CO₂R¹ the copolymer further comprises end-capping groups that are aromatic.

2. (Original) The copolymer of Claim 1, wherein R groups in one or more of the at least one first monomeric unit are independently selected from alkyl groups having 1 to 30 carbon atoms; heteroalkyl groups having 1-30 carbon atoms and one or more heteroatoms

Application No.: 10/809,737
Docket No.: PE0667 US DIV

of S, N, or O; aryl groups having from 6 to 20 carbon atoms, and heteroaryl groups having from 2 to 20 carbon atoms and one or more heteroatoms of S, N, or O.

3. (Original) The copolymer of Claim 1 that excludes any vinylene monomeric units.

4. (Previously Presented) The copolymer of Claim 1 wherein each R group in each of Formula I, Formula 1(a), and Formula III is selected from:

hydrogen;

alkyl;

aryl;

heteroalkyl;

heteroaryl;

F;

-CN;

-P(R¹)₂ and -SOR¹, where R¹ is a substituent on a heteroatom which can be the same or different at each occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl;

-NO₂;

a beta-dicarbonyl having Formula XII;

-C_ψH_θF_λ;

-OC_ψH_θF_λ;

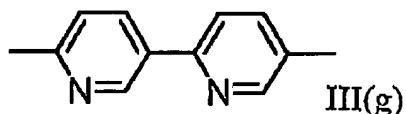
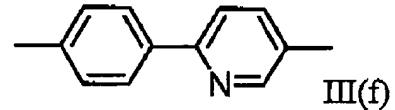
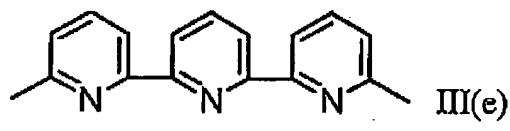
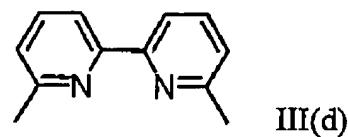
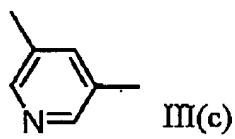
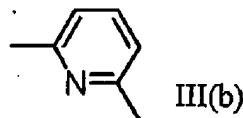
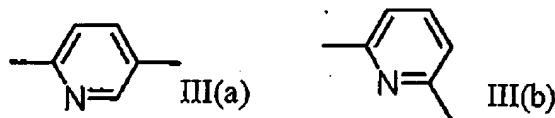
-OR¹, -CO₂R¹, -SR¹, -N(R¹)₂, and -SO₂R¹ where R¹ is a straight chain or branched alkyl of more than 20 carbons or a straight chain or branched heteroalkyl.

5. (Original) The copolymer of Claim 1 wherein the at least one of the R groups in one or more of the at least one first monomeric unit is independently selected from linear and branched n-butyl groups; linear and branched iso-butyl groups; linear and branched pentyl groups; hexyl groups, and octyl groups with and without olefinic unsaturation; phenyl groups, thiophene groups, carbazole groups, alkoxy groups, phenoxy groups and cyano groups.

6. (Original) The copolymer of Claim 1 wherein at least one of the R groups in one or more of the at least one first monomeric unit are independently selected from H, C₆-C₁₂ alkoxy, phenoxy, C₆-C₁₂ alkyl, phenyl and cyano.

7. (Previously Presented) The copolymer of Claim 1 wherein one or more of the at least one second monomeric unit is selected from Formulae III(a) through III(g),

Application No.: 10/809,737
Docket No.: PE0667 US DIV

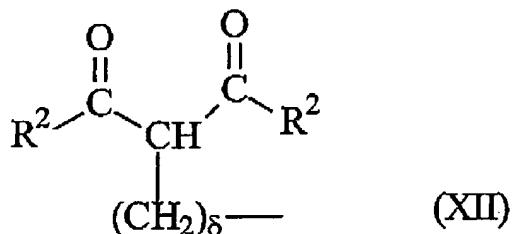


8. (Cancelled).

9. (Previously Presented) The copolymer of Claim 1, wherein one or more of the at least one second monomeric unit has Formula III wherein R is selected from:

Application No.: 10/809,737
 Docket No.: PE0667 US DIV

partially or fully fluorinated alkyl groups having from 1 to 12 carbon atoms;
 alkoxy groups having from 1 to 12 carbon atoms;
 esters having from 3 to 15 carbon atoms;
 $-\text{SR}^1$, $-\text{N}(\text{R}^1)_2$, $-\text{P}(\text{R}^1)_2$, $-\text{SOR}^1$, $-\text{SO}_2\text{R}^1$, where R^1 is an alkyl group having from 1 to 12 carbon atoms;
 $-\text{NO}_2$; and
 beta-dicarbonyls having Formula XII



where:

in Formula XII:

R^2 is an alkyl group having from 1 to 12 carbon atoms and δ is 0, 1, or 2.

10. (Original) The copolymer of Claim 1, where one or more of the at least one second monomeric unit has Formula III wherein:

R groups are selected from hydrogen, C₆-C₁₂ alkyl groups, C₆-C₂₀ aryl groups, and C₂-C₂₀ heteroaryl groups; and

E linking groups are selected from pyridinediyl (-C₅H₄N-) and bipyridinediyl (-C₅H₄N-C₅H₄N-).

11 -13. (Cancelled).

14. (Original) An electronic device comprising at least one electroactive layer comprising the copolymer of Claim 1.

15. (Original) The device of Claim 14, wherein the device comprises a hole injection/transport layer comprising the copolymer of Claim 1.

Application No.: 10/809,737
Docket No.: PE0667 US DIV

16. (Original) The device of Claim 14, wherein the device comprises an electron injection/transport layer comprising the copolymer of Claim 1.

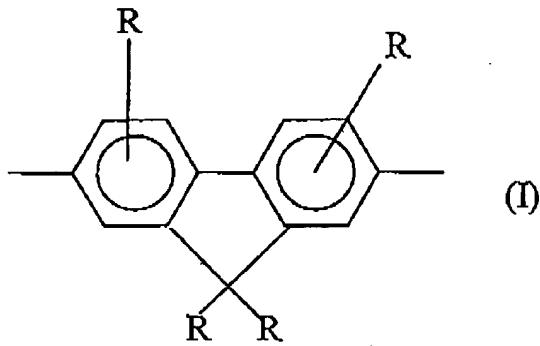
17. (Original) The device of Claim 14, wherein the electroactive layer comprises a light-emitting material comprising the copolymer of Claim 1.

18. (Cancelled).

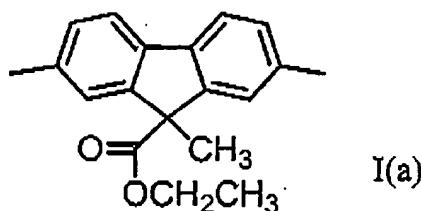
19. (Original) The device of Claim 14, wherein the device is selected from a light-emitting device, a photodetector, and a photovoltaic device.

20. (Original) The device of Claim 14, wherein the device is an electroluminescent display.

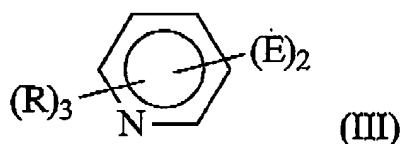
21. (Currently Amended) A light-emitting device comprising at least one light-emitting layer comprising a copolymer having the following formula
at least one first monomeric unit and at least one second monomeric unit, wherein the at least one first monomeric unit has a formula selected from the group consisting of Formulae I and I(a)



Application No.: 10/809,737
 Docket No.: PE0667 US DIV



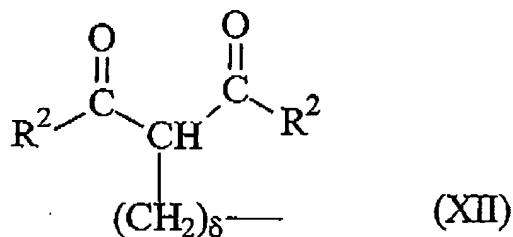
and the at least one second monomeric unit is selected from 6-membered-ring heteroaromatic groups having Formula III



where:

in each of Formulae I and III:

R is a substituent on a carbon atom which can be the same or different at each occurrence and is selected from hydrogen, alkyl, aryl, heteroalkyl, heteroaryl, F, -CN, -OR¹, -CO₂R¹, -C_ψH_θF_λ, -OC_ψH_θF_λ, -SR¹, -N(R¹)₂, -P(R¹)₂, -SOR¹, -SO₂R¹, -NO₂, and beta-dicarbonyls having Formula XII



or adjacent R groups together can form a 5- or 6-membered cycloalkyl, aryl, or heteroaryl ring,

such that:

R¹ is a substituent on a heteroatom which can be the same or different at each occurrence and is selected from alkyl, aryl, heteroalkyl and heteroaryl; and

Application No.: 10/809,737
Docket No.: PE0667 US DIV

ψ is an integer between 1 and 20, and θ and λ are integers satisfying Equation A1 below:

$$\theta + \lambda = 2\psi + 1; \quad (\text{Equation A1});$$

in Formula III:

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in Formula XII:

R^2 is selected from hydrogen, alkyl, aryl, heteroalkyl and heteroaryl;

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